This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 (currently amended): A method for managing the transmission of information packets on channels of a telecommunications network comprising the steps of:

- arranging said packets into user queues received in respective buffers at a base station, by measuring the occupancy level of said buffers,

- sorting ~~said~~ users into respective real time and non real time classes ~~(RT, NRT)~~ identified by ~~the~~ service modes requested by said users,

- measuring ~~the~~ propagation conditions on the transmission channel respectively associated to said users, and

- determining ~~the~~ a priority in the transmission of said packets, by choosing ~~the~~ an order in which said respective queues are visited as a function of:

- a first level priority, linked to whether said users belong to said respective real time and non real time classes ~~(RT, NRT)~~,

- a second level priority, linked to both the occupancy level of the respective buffer and the propagation conditions of said respective channel.

2 (previously presented): A method as claimed in claim 1, wherein among the users with the same first level of priority, the user with the highest buffer occupancy and the best channel propagation condition is chosen.

3-5 (cancelled)

6 (currently amended): A method as claimed in claim 1, further comprising the step of dividing said users into:

- at least a first real time class ~~(RT)~~, comprising users who require conversational or streaming services, and

- at least a ~~second~~ first non real time class ~~(NRT)~~, comprising users who require interactive or background services.

7 (previously presented): A method as claimed in claim 1, further comprising the steps of:

- determining the transmission capacity available for the transmission of said packets, by identifying a negotiated peak transmission rate value,

- trying to assign to the highest priority user the transport format corresponding to said peak rate, by transmitting the related queued packets in case of positive outcome of said assignment,

- in case of negative outcome of said assignment, trying to allocate to said highest priority user the next highest transport format, said attempts with lower format being continued until the allocated rate falls within the available capacity.

8 (previously presented): A method as claimed in claim 7 wherein, after transmitting the information packets associated to said highest priority user, the step of detecting any available residual transmission capacity and the step of repeating the previous steps for said higher priority user, for the user with the next highest priority, until there are no more said transmission resources or active users.

9 (previously presented): A method as claimed in claim 1, applied to a transmission network organised in respective cells in which said transmission resources are shared with real time services which are given top priority, further comprising the step of estimating the residual capacity of the respective cell left free by said real time services available for the transmission of said information packets.

10 (currently amended): A method as claimed in claim 1, further comprising allowing access into the system, via an access control ~~(AC)~~ function, to users with information packets to be transmitted; the access being conducted, for at least some ~~(NRT)~~ of said non real time users by evaluating exclusively the possibility for said users to transmit their information packets with the minimum rate prescribed by the set of transport formats of the network.

11 (currently amended): A method as claimed in claim 1 or claim 10, further comprising providing a packet scheduling function ~~(PS)~~, configured to verify that at least some ~~(NRT)~~ of

said non real time users transmit without congesting the radio interface, by controlling and setting, on a case by case basis, the rate of the respective dedicated connection in order not to exceed a given limit imposed by the characteristics of said network.

12 (previously presented): A method as claimed in claim 1, further comprising the step of organising the transmission of said information packets by means of a state machine which allows:

- a first state corresponding to the recognition that information packets are present in at least one of said respective buffers,

- a second state corresponding to the transmission of said information packets by means of corresponding transmission resources, and

- a suspended state corresponding to the recognition of the unavailability of resources for the transmission of said information packets with the conservation of said transmission channel, said state machine being configured to evolve anew from said third state to said second state without dropping said transmission channel, when said transmission resources become available again.

13 (currently amended): A method for managing the transmission of information packets on a communication network organised in cells, in which said information packets can be selectively transmitted, within said cells, both on a shared channel ~~(RACH/FACH)~~ and on a dedicated channel ~~(DCH)~~, comprising the steps of:

- transmitting the information packets of a determined user on said shared channel ~~(RACH/FACH)~~ or on a respective dedicated channel ~~(DCH)~~ as a function of a related traffic volume,

- defining at least one threshold ~~(T1, T2)~~ of traffic level, determining at a serving radio network controller ~~the~~ a switching of the transmission of the information packets of said determined user on said dedicated channel ~~(DCH)~~ starting from said shared channel ~~(RACH/FACH)~~ when the related traffic level grows reaching said at least one threshold ~~(T1, T2)~~ and determining at said serving radio network controller the switching of the transmission of the information packets of said determined user on said shared channel ~~(RACH/FACH)~~ starting from

said dedicated channel ~~(DCH)~~ when said respective traffic volume drops reaching said at least one threshold ~~(T1, T2)~~, and

~~further comprising the step of:~~ selectively varying the level of said at least one threshold ~~(T1, T2)~~.

14 (currently amended): A method as claimed in claim 13, further comprising the step of: reducing said at least one threshold in conditions of reduced traffic in order to favour the use of said dedicated channel ~~(DCH)~~.

15 (currently amended): A method as claimed in claim 13, further comprising the step of: raising said at least one threshold, making more difficult the switch to said dedicated channel ~~(DCH)~~ starting from said shared channel ~~(RACH/FACH)~~, under alarmed operating conditions of said network.

16 (currently amended): A method as claimed in claim 13, further comprising the steps of:

detecting a state of approaching congestion of said network; and

inhibiting the switching to said dedicated channel ~~(DCH)~~ starting from said shared channel ~~(RACH/FACH)~~ under said ~~near-congestion~~state of approaching congestion of said network ~~conditions~~.

17 (currently amended): A method as claimed in claim 13, further comprising the steps of:

measuring the propagation conditions on the transmission channel respectively associated to said determined user as dedicated channel ~~(DCH)~~; and

determining the switching of the transmission of the information packets of said determined user on said shared channel ~~(RACH/FACH)~~ starting from said dedicated channel ~~(DCH)~~ in the presence of a degradation of said propagation conditions below a threshold value.

18 (currently amended): A method as claimed in claim 17, wherein said switching on said shared channel ~~(RACH/FACH)~~ starting from said dedicated channel ~~(DCH)~~ is determined as a function of the signal/interference ratio ~~(SIR)~~.

19 (currently amended): A method as claimed in claim 18, wherein said switching to said shared channel ~~(RACH/FACH)~~ starting from said dedicated channel ~~(DCH)~~ is determined based on the difference between the measured value determined when the measured value ~~($SIR_{measured}$)~~ and the target value ~~(SIR_{target})~~ of the signal/interference ratio ~~(SIR)~~ reach~~ing~~ a selectively determined threshold value ~~(a)~~.

20 (currently amended): A system for managing the transmission of information packets on channels of a telecommunications network, comprising:

- a plurality of respective buffers configured to receive said packets in user queues at a base station; said users being sorted into respective real time and non real time classes ~~(RT, NRT)~~ identified by the service modes requested by said users,

- detector modules ~~(CM, DM)~~ able to measure the propagation conditions on the transmission channel respectively associated to said users, and

- a module for managing packet scheduling ~~(PS)~~ configured to determine the priority in the transmission of said packets, by choosing the order in which said respective queues are visited as a function of:

- a first level priority, linked to whether said users belong to said respective real time and non real time classes ~~(RT, NRT)~~,

- a second level priority, linked to both the occupancy level of the respective buffer and the propagation conditions of said respective channel.

21 (currently amended): A system as claimed in claim 20, wherein said module for managing packet scheduling ~~(PS)~~ is configured to choose, among the users with the same first level priority, the user who has the highest buffer occupancy and demonstrates the best channel propagation conditions.

22-24 (cancelled)

25 (currently amended): A system as claimed in claim 20, wherein said module for managing packet scheduling ~~(PS)~~ is configured to:

- determine the transmission capacity available for the transmission of said packets, by identifying a negotiation peak transmission rate value,

- try to assign to the highest priority user the transport format corresponding to said peak rate, by transmitting the related queued packets in case of positive outcome of said assignment,

- in case of negative outcome of said assignment, try to allocate to said highest priority user the next highest transport format, said attempts with lower format being continued until the allocated rate falls within available capacity.

26 (currently amended): A system as claimed in claim 25, ~~characterised in that~~wherein said module for managing packet scheduling ~~(PS)~~ is configured to detect, after transmitting the information packets associated to said highest priority user, any available residual transmission capacity and to repeat the operations carried out for said highest priority user until there are no more said transmission capacity or active users.

27 (currently amended): A system as claimed in claim 20, associated to a transmission network organised in respective cells having a determined transmission capacity shared with real time services whereto is assigned the highest priority, wherein said module for managing packet scheduling ~~(PS)~~ is configured to estimate a residual capacity of the respective cell left free by said real time services available for the transmission of said information packets.

28 (currently amended): A system as claimed in claim 20, further comprising an access control module ~~(AC)~~ configured to allow users with information packets to be transmitted to enter the system; the access being conducted, for at least some ~~(NRT)~~ of said non real time users by evaluating exclusively the possibility for said users to transmit their information packets with the minimum rate prescribed by the set of transport formats of the network.

29 (currently amended): A system as claimed in claim 20, wherein said module for managing packet scheduling ~~(PS)~~ is configured to verify that at least some ~~(NRT)~~ of said non real time users transmit without congesting the radio interface, controlling and setting on a case by case

basis the rate of the respective dedicated connection in order not to exceed a given limit imposed by the characteristics of said network.

30 (previously presented): A system as claimed in claim 20, further comprising a state machine which allows:

- a first state corresponding to the recognition of the fact that information packets are present in at least one of said respective buffers,

- a second state corresponding to the transmission of said information packets by means of corresponding transmission resources, and

- a suspended state corresponding to the recognition of the unavailability of resources for the transmission of said information packets with the conservation of said transmission channel, said state machine configured to evolve anew from said third state to said second state without dropping said transmission channel, when said transmission resources become available again.

31 (currently amended): System for managing the transmission of information packets on a communication network organised in cells, in which said information packets can be selectively transmitted, within said cells, both on a shared channel ~~(RACH/FACH)~~ and on a dedicated channel ~~(DCH)~~, comprising a module for managing packet scheduling ~~(PS)~~ configured to:

- transmit the information packets of a determined user on said shared channel ~~(RACH/FACH)~~ or on a respective dedicated channel ~~(DCH)~~ as a function of a related traffic volume,

- define at least one threshold ~~(T1, T2)~~ of traffic level, determining the switching of the transmission of the information packets of said determined user on said dedicated channel ~~(DCH)~~ starting from said shared channel ~~(RACH/FACH)~~ when the related traffic level grows reaching said at least one threshold ~~(T1, T2)~~ and determine the switching of the transmission of the information packets of said determined user on said shared channel ~~(RACH/FACH)~~ starting from said dedicated channel ~~(DCH)~~ when said respective traffic volume drops reaching said at least one threshold ~~(T1, T2)~~, ~~characterised in that~~wherein said module for managing packet scheduling ~~(PS)~~ is configured selectively to vary the level of said at least one threshold ~~(T1, T2)~~.

32 (currently amended): A system as claimed in claim 31, wherein said module for managing packet scheduling ~~(PS)~~ is configured to reduce said at least one threshold under reduced load conditions in order to favour the use of said dedicated channel ~~(DCH)~~.

33 (currently amended): A system as claimed in claim 31, wherein said module for managing packet scheduling ~~(PS)~~ is configured to raise said at least one threshold, making more difficult the switching towards said dedicated channel ~~(DCH)~~ starting from said shared channel ~~(RACH/FACH)~~ under alarmed operating conditions of said network.

34 (currently amended): A method as claimed in claim 31, wherein said module for managing packet scheduling ~~(PS)~~ is made sensitive to a state of approaching congestion of said network and is configured to inhibit the switching to said dedicated channel ~~(DCH)~~ starting from said shared channel ~~(RACH/FACH)~~, under said ~~conditions of near congestion~~state of approaching congestion of said network.

35 (currently amended): A system as claimed in claim 31, further comprising at least one detector module ~~(CM, DM)~~ configured to detect the propagation conditions on the transmission channel respectively associated to said user as dedicated channel ~~(DCH)~~ and said module for managing packet scheduling ~~(PS)~~ is configured to determine the switching of the transmission of the information packets of said determined user on said shared channel ~~(RACH/FACH)~~ starting from said dedicated channel ~~(DCH)~~ in the presence of degradation of said propagation conditions below a threshold value.

36 (currently amended): A system as claimed in claim 35, wherein said module for managing packet scheduling ~~(PS)~~ is configured to determine said switching on said shared channel ~~(RACH/FACH)~~ starting from said dedicated channel ~~(DCH)~~ as a function of the signal/interference ratio ~~(SIR)~~ detected by said at least one detector module.

37 (currently amended): A system as claimed in claim 36, wherein said module for managing packet scheduling ~~(PS)~~ is configured to determine said switching on said shared channel

~~(RACH/FACH)~~ starting from said dedicated channel ~~(DCH)~~ based on the difference between the measured value ~~($SIR_{measured}$)~~ and the target value ~~(SIR_{target})~~ of the signal/interference ratio ~~(SIR)~~ reaching a selectively determined threshold value ~~(a)~~.

38 (currently amended): A computer readable medium storing instructions for execution by a processor, the instructions when executed by a processor performing:

- arranging packets into user queues received in respective buffers at a base station, by measuring the occupancy level of said buffers,

- sorting users into respective real time and non real time classes identified by service modes requested by said users,

- measuring propagation conditions on a transmission channel respectively associated to said users, and

- determining a priority in the transmission of said packets, by choosing an order in which said respective queues are visited as a function of:

- a first level priority, linked to whether said users belong to said respective real time and non real time classes,

- a second level priority, linked to both the occupancy level of the respective buffer and the propagation conditions of said respective channel~~the method of claim 1 or claim 13~~.

39. (new) A computer readable medium storing instructions for execution by a processor, the instructions when executed by a processor performing:

- transmitting information packets of a determined user on a shared channel or on a respective dedicated channel as a function of a related traffic volume,

- defining at least one threshold of traffic level, determining at a serving radio network controller a switching of the transmission of the information packets of said determined user on said dedicated channel starting from said shared channel when the related traffic level grows reaching said at least one threshold and determining at said serving radio network controller the switching of the transmission of the information packets of said determined user on said shared

channel starting from said dedicated channel when said respective traffic volume drops reaching said at least one threshold, and

- selectively varying the level of said at least one threshold.